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13. ABSTRACT

Provides a method for evaluation of antivehicular mine operational and functional characteristics. Identifies supporting tests, facilities, and equipment required. Provides procedures for functional suitability tests. Applicable to land and underwater mines.

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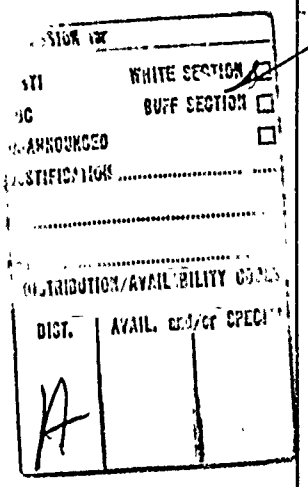

U. S. ARMY TEST AND EVALUATION COMMAND
SYSTEM SERVICE TEST OPERATIONS PROCEDURES

AMSTE-RP-101
*Test Operations Procedure 4-3-151 10 February 1972

MINES, ANTIVEHICULAR

SECTION I
GENERAL

1. Purpose and Scope. This TOP is to be used to test antivehicular mines with land and/or underwater modes of operation. Test phases include the evaluation of the operational and performance characteristics of antivehicular mines.

2. Background. The U.S. Army has established a requirement for antivehicular mines due to the mechanization of modern armies. Mines are both weapons and obstacles. As weapons they cause casualties; as obstacles they delay, restrict, divert or channelize enemy movement. Placed underwater they increase the effectiveness of inland waterway obstacles such as lakes, streams, rivers and canals. The increased use of underwater mines in coastal waters is dictated by the swimming capability built into assault vehicles. Once laid, mines become a hazard to both enemy and friendly forces until removed or rendered harmless. Antivehicular mines are of many types and can be detonated by a variety of influences, such as pressure, movement, magnetic fields, radio signals, etc.

3. Equipment and Facilities. Area suitable for mine laying operations, mine detonation and weathering tests, and the specific requirements noted in the tests in Section II below.

*This TOP supersedes MTPs 4-3-097 and 4-3-098, dated 1 April 1971 and 12 May 1971 respectively.

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SECTION II
TEST PROCEDURES

4. Supporting Tests. Common Service TOPs, the tests defined in Section III, and other published documents to be considered in formulating a service test plan are as follows:

	TEST SUBJECT TITLE	PUBLICATION NO.
a.	Operator Training and Familiarization	10-3-501
b.	Safety Hazards	2-3-501
c.	Physical Characteristics	9-3-500
d.	Technical Inspection	9-3-508
e.	Land Mines	TM9-1345-200
f.	Land Mine Warfare	FM 20-32
g.	Functional Suitability (refer to para 5)	
h.	Surface Transportability (Vehicles)	2-3-519
i.	Air Portability, Internal-Suitability of Supplies and Equipment	7-3-515
j.	Air Portability, External-Suitability of Supplies and Equipment for	7-3-516
k.	Human Factors Engineering	2-3-516
l.	Maintenance Evaluation - Tools and Test Equipment	2-3-527
m.	Maintenance Evaluation - Technical Manuscripts and Manuals	2-3-528
n.	Reliability	9-3-503
o.	Mine Planting Equipment	9-3-088

SECTION III
SUPPLEMENTARY INSTRUCTIONS

5. Functional Suitability.

a. Objective. To determine the suitability of an antivehicular mine

for employment in land mine warfare within the prescribed requirements of the MN or other approved criteria.

b. Method. The test item is employed in its functional role in a standard pattern mine field, observing ease of installation and arming and the time required using various mine laying techniques in accordance with the applicable manual. All available means of detection are used to locate test item in its mode of operation (i.e., buried or underwater). The minefield is breached by all known methods of breaching and the cleared gap is measured. A specified vehicle is towed over the test item and its location observed at time of detonation. The condition of vehicle is noted before and after detonation. This is repeated using the entire family of fuzes specified for the test item to determine fuze compatibility. The effects of burial and/or submersion for a specified period of time in the ground and/or fresh and salt water is noted, if not scheduled in environmental testing. A specified percentage of all operations are conducted during the hours of darkness using artificial illumination. Self destructor sterilization mechanisms (if applicable) are tested by attempted detonation of separate test items a specified period (i.e., 1 day) before and after the preset increment for self-destruct or sterilization. Failures are investigated for cause and effect. Observations of the climatic conditions prevailing during field tests at the test site are made to provide a record for future evaluation.

c. Data Required.

(1) Nomenclature of test item.

(2) Description of test set up and the time required.

(3) Difficulties encountered during test operation.

(4) Climatic conditions (temperature, humidity, etc.).

(5) Deficiencies and shortcomings observed.

(6) Personnel type and number required to operate the test item.

(7) Remarks concerning overall operation of test item.

d. Analytical Plan. At the completion of data collection phases, test results are evaluated to determine whether or not the test item meets the stated performance requirements.

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